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EXAMINER	
FERGUSON, MARISSA L	

ART UNIT	PAPER NUMBER
2854	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/626,604	SATO ET AL.	
	Examiner	Art Unit	
	Marissa L. Ferguson	2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22,34-57,70-93,106-117 and 124-135* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *124-135* is/are allowed.

6)☒ Claim(s) *1-22,34,38-43,45,46,50-57,70,74-79,81,82,86-93,106,107,109-113 and 115-117* is/are rejected.

7)☒ Claim(s) *10,21,35-37,44,47-49,71-73,80,83-85,108 and 114* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 7-25-03. & 10-27-03
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group 1, Subgroup a, Claims 1-22, 34-45, 46-57, 70-93, 106-117, and 124-135 in the reply filed on 7/13/05 is acknowledged. The traversal is on the ground(s) that additional claims would not placing a burden on the examiner and an overlapping of search area. This is not found persuasive because the non-elected claims deal with two print drums, two press rollers and the specific locations of the print drums with respect to the press rollers. The elected group focuses on mainly one print, one press roller.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

2. Claims 9,20, 43,55,79, 91 on line 5, are objected to because of the following informalities: the examiner does not understand which "said roller" the applicant is referring to. There is more than one roller that is claimed. Appropriate correction is required.

3. Claims 10, 11, 21, 22,44, 45, 56, 57, 80, 81, 92 and 93 lines 1-2, are objected to because of the following informalities: the examiner does not understand which "said roller" the applicant is referring to. There is more than one roller that is claimed. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Takeda (US Patent 5,937,750).

Regarding claim 1, Takeda teaches at least one print drum (1), at least one press roller (20,26,28 and 29) facing said print drum for pressing the recording medium against said print drum (Figures 1,11 and 15-17) and wherein said press roller comprises when configured to press the other side of the recording medium against said print drum (Abstract) and an elastic body having a fluorine compound layer on a surface thereof, a fluorine compound layer comprising a tube and wherein the fluorine compound layer is formed of a coating (column 8, lines 31-33 and lines 47-49 and many references throughout the patent).

Regarding claim 2, Takeda discloses that the roller can be made with a rubber with the fluorine compound layer closely fitted on the surface of the rubber (Column 4, Lines 15-18).

Regarding claim 3, Takeda discloses the rubber and fluorine compound layer as mentioned above, and the method of how the fluorine compound layer holds no patentable weight in an apparatus claim.

Regarding claim 4, Takeda teaches a cleaning means (Column 9, Lines 26-27 and elements 50,58 and 90) for removing ink deposited on a surface of said press roller.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (US Patent 5,937,750) in view of Kanno (US Patent 6,718,872).

Takeda teaches the claimed invention with the exception of a cleaning means located between a position for transferring an image to a recording medium and a position of refeeding and a drive means causing a roller to rotate at a peripheral speed different from a peripheral speed of a roller. Kanno teaches a printer with duplex capabilities with a porous print drum (cleaning means (26) located between a position for transferring an image and a position of refeeding (25) and a cleaning drive means for operating a roller at a different peripheral speed (Column 6, Lines 51-56). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention as taught by Takeda to include a cleaning means at the claimed

location and a drive means as taught by Kanno, since Kanno teaches that it is advantageous to thoroughly and properly clean the surface of the press roller in an effective amount of time.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (US Patent 5,937,750) in view of Kanno (US Patent 6,718,872) as applied to claims 1 and 6 above, and further in view of Tomono et al. (US Patent 5,400,065).

Takeda and Kanno both teach the claimed invention with the exception of a porous cleaning roller. Tomono et al. teaches a porous cleaning roller (element 8 and figure 8). It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Takeda to replace the cleaning means thereof with a porous cleaning roller as taught by Tomono et al., since Tomomo et al. teaches that it is advantageous to not scratch the surface of any element the roller may come in contact with.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (US Patent 5,937,750) in view of Ozaki et al. (US Patent 5,207,157).

Takeda teaches the invention claimed including a cleaning means comprising a blade (elements 58,90 located on Figures 16-17) that contacts a press roller (20), however he does not explicitly disclose a coating means for coating a small amount of liquid on a surface of a press roller. Ozaki et al. teaches a coating means for coating a small amount of liquid (136) on the surface of a cleaning roller (Column 10, Lines 39-41 and 61-65). By coming in contact with the cleaning roller, the press roller will inherently be coated with a small amount of liquid. It would have been obvious to one having

ordinary skill in the art at the time the invention was made to further modify the invention as taught by Takeda to include a coating means as taught by Ozaki et al., since Ozaki et al. teaches that it is advantageous to effectively clean the surface of a roller of all dust and dirt particles.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (US Patent 5,937,750) in view of Ito (JP 410166705).

Takeda teaches the invention claimed with the exception of a roller pressed against a press roller by preselected pressure for removing ink deposited on the surface of the press roller by causing the ink to be transferred to the roller. Ito teaches a cleaning device (10) pressed against a transfer body (4) for the cleaning the surface and in turn transfers an image to the paper (Solution). It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Takeda to include roller pressed against a surface for transferring an image as taught by Ito, since Ito teaches that it is advantageous to be in a state with less oily components.

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (US Patent 5,937,750) in view of Ito (JP 410166705) as applied to claim 9 above, and further in view of Tanaka et al. (JP 2001-239733).

Takeda teaches the invention claimed with the exception of a roller that is formed of either one of rubber and metal and has a smooth surface. Tanaka et al. teaches a rubber cleaning roller (element 24 and Paragraph 0045). It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify

the invention as taught by Takeda to replace the cleaning roller thereof with a rubber cleaning roller as taught by Tanaka et al., since Tanaka et al. teaches that rubber easily removes dust particles from paper.

10. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asai et al. (JP 2002-172839) in view of Takeda (US Patent 5,937,750).

Regarding claims 12-14, Asai et al. teaches a stencil printer with a first and a second image, which are to be respectively transferred to one side and the other side of a sheet-like recording medium, side by side in a circumferential direction of a print drum, wrapping said master around said print drum, pressing said sheet-like recording medium against said print drum with a press roller to thereby print said first image on said one side, and then pressing said sheet-like recording medium against said print drum with said press roller to thereby print said second image on said other side (Solution). Asai et al. does not teach an elastic body having a fluorine compound layer on a surface thereof, a fluorine compound layer comprising a tube and wherein the fluorine compound layer is formed of a coating.

Takeda teaches an elastic press roller (20) with an outer surface comprised of a fluorine resin or fluorine rubber compound comprising a fluorine compound layer comprising a film tube and wherein a fluorine compound is formed by a coating (Column 8, lines 31-33 and lines 47-49 and many references throughout the patent).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention as taught by Asai et al. to replace the press

roller thereof with a press roller as taught by Takeda, since Takeda teaches that it is advantageous to provide a stable transfer of the image.

11. Regarding claim 15, Asai et al. teaches the claimed invention with the exception of a cleansing means for removing ink deposited on the surface of a press roller. Takeda teaches a stencil printer with a cleaning means (Column 14, Lines 12-20). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention as taught by Asai et al. to include a cleaning means thereof as taught by Takeda, since Takeda teaches that it is advantageous to properly and thoroughly clean the surface of the roller.

12. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asai et al. (JP 2002-172839) in view of Takeda (US Patent 5,937,750) as applied to claims 12 and 15 above, and further in view Kanno (US Patent 6,718,872).

Asai et al. and Takeda both teach the claimed invention with the exception of a cleaning means located between a position for transferring an image to a recording medium and a position of refeeding and a drive means causing a roller to rotate at a peripheral speed different from a peripheral speed of a roller. Kanno teaches a printer with duplex capabilities with a cleaning means (26) located between a position for transferring an image and a position of refeeding (25) and a cleaning drive means for operating a roller at a different peripheral speed (Column 6, Lines 51-56). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention as taught by Asai et al. to include a cleaning means at the claimed location and a drive means as taught by Kanno, since Kanno teaches that it is

advantageous to thoroughly and properly clean the surface of the press roller in an effective amount of time.

13. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asai et al. (JP 2002-172839) in view of Takeda (US Patent 5,937,750) and Kanno (US Patent 6,718,872) as applied to claim 17 above, and further in view of Tomono et al. (US Patent 5,400,065).

Asai et al., Takeda and Kanno all teach the claimed invention with the exception of a porous cleaning roller. Tomono et al. teaches a porous cleaning roller (element 8 and figure 8). It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Asai et al. to replace the cleaning means thereof with a porous cleaning roller as taught by Tomono et al., since Tomomo et al. teaches that it is advantageous to not scratch the surface of any element the roller may come in contact with.

14. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asai et al. (JP 2002-172839) in view of Takeda (US Patent 5,937,750) as applied to claim 15 above, and further in view of Ozaki et al. (US Patent 5,207,157).

Asai et al. and Takeda both teach the invention claimed including a cleaning means comprising a blade (elements 58,90 located on Figures 16-17) that contacts a press roller (20) and a roller pressed against a press roller at a preselected pressure as taught by Takeda, however he does not explicitly disclose a coating means for coating a small amount of liquid on a surface of a press roller. Ozaki et al. teaches a coating means for coating a small amount of liquid (136) on the surface of a cleaning roller

(Column 10, Lines 39-41 and 61-65). By coming into contact with the cleaning roller, the press roller will inherently be coated with a small amount of liquid. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Asai et al. to include a coating means as taught by Ozaki et al., since Ozaki et al. teaches that it is advantageous to effectively clean the surface of a roller of all dust and dirt particles.

15. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asai et al. (JP 2002-172839) in view of Takeda (US Patent 5,937,750) and Ozaki et al. (US Patent 5,207,157) as applied to claim 20 above, further in view of Tanaka et al. (JP 2001-239733).

Asai et al., Takeda and Ozaki et al. all teach the invention claimed including a blade (58,90) as taught by Takeda. However, they do not explicitly teach a roller that is formed of either one of rubber and metal and has a smooth surface. Tanaka et al. teaches a rubber cleaning roller (element 24 and Paragraph 0045). It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Asai et al. to replace the cleaning roller thereof with a rubber cleaning roller as taught by Tanaka et al., since Tanaka et al. teaches that rubber easily removes dust particles from paper.

16. Claims 34, 38, 70 and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (US Patent 5,937,750) in view of Hiroshi et al. (JP 05-70010).

Regarding claim 34 and 70, Takeda teaches at least one print drum (1), at least one press roller (20,26,28 and 29) facing said print drum for pressing the recording medium against said print drum (Figures 1,11 and 15-17) and wherein said press roller comprises when configured to press the other side of the recording medium against said print drum (Abstract) and an elastic body having a fluorine compound layer on a surface thereof, a fluorine compound layer comprising a tube and wherein the fluorine compound layer is formed of a coating (column 8, lines 31-33 and lines 47-49 and many references throughout the patent). However, he does not explicitly disclose fine projections formed on a surface by a treatment.

Hiroshi et al. teaches a roller with projections on the surface (elements 15, Abstract and Constitution). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention as taught by Takeda to include the projections thereof as taught by Hiroshi et al., since Hiroshi et al. teaches that it is advantageous to facilitate the adhesion of the paper onto the roller.

Regarding claims 38 and 74, Takeda teaches a cleaning means (Column 9, Lines 26-27 and elements 50,58 and 90) for removing ink deposited on a surface of said press.

17. Claims 39,40, 75 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (US Patent 5,937,750) in view of Hiroshi et al. (JP 05-70010) as applied to claims 34, 38, 70 and 74 above, and further in view of Kanno (US Patent 6,718,872).

Takeda and Hiroshi et al. both teach the claimed invention with the exception of a cleaning means located between a position for transferring an image to a recording medium and a position of refeeding and a drive means causing a roller to rotate at a peripheral speed different from a peripheral speed of a roller. Kanno teaches a printer with duplex capabilities with a cleaning means (26) located between a position for transferring an image and a position of refeeding (25) and a cleaning drive means for operating a roller at a different peripheral speed (Column 6, Lines 51-56). It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Takeda to include a cleaning means at the claimed location and a drive means as taught by Kanno, since Kanno teaches that it is advantageous to thoroughly and properly clean the surface of the press roller in an effective amount of time.

18. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (US Patent 5,937,750) in view of Hiroshi et al. (JP 05-70010) and Kanno (US Patent 6,718,872) as applied to claim 40 above, and further in view of Tomono et al. (US Patent 5,400,065).

Takeda, Hiroshi et al. and Kanno all teach the claimed invention with the exception of a porous cleaning roller. Tomono et al. teaches a porous cleaning roller (element 8 and figure 8). It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Takeda to replace the cleaning means thereof with a porous cleaning roller as taught by

Tomono et al., since Tomomo et al. teaches that it is advantageous to not scratch the surface of any element the roller may come in contact with.

19. Claims 43 and 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (US Patent 5,937,750) in view of Hiroshi et al. (JP 05-70010) as applied to claim 34 above, further in view of Ito (JP 410166705).

Takeda and Hiroshi et al. both teach the invention claimed with the exception of a roller pressed against a press roller by preselected pressure for removing ink deposited on the surface of the press roller by causing the ink to be transferred to the roller. Ito teaches a cleaning device (10) pressed against a transfer body (4) for the cleaning the surface and in turn transfers an image to the paper (Solution). It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Takeda to include roller pressed against a surface for transferring an image as taught by Ito, since Ito teaches that it is advantageous to be in a state with less oily components

20. Claims 42 and 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (US Patent 5,937,750) in view of Hiroshi et al. (JP 05-70010) as applied to claims 34,38,70 and 74 above, and further in view of Ozaki et al. (US Patent 5,207,157).

Takeda and Hiroshi et al. both teach the invention claimed including a cleaning means comprising a blade (elements 58,90 located on Figures 16-17) that contacts a press roller (20) as taught by Takeda, however he does not explicitly disclose a coating means for coating a small amount of liquid on a surface of a press roller. Ozaki et al. teaches a coating means for coating a small amount of liquid (136) on the surface of a

cleaning roller (Column 10, Lines 39-41 and 61-65). By coming in contact with the cleaning roller, the press roller will inherently be coated with a small amount of liquid. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Takeda to include a coating means as taught by Ozaki et al., since Ozaki et al. teaches that it is advantageous to effectively clean the surface of a roller of all dust and dirt particles.

21. Claims 45 and 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (US Patent 5,937,750) in view of Hiroshi et al. (JP 05-70010) as applied to claims 34,43,70 and 79 above, further in view of Tanaka et al. (JP 2001-239733).

Takeda and Hiroshi et al. both teach the invention claimed including a blade (58,90) as taught by Takeda. However, they do not explicitly teach a roller that is formed of either one of rubber and metal and has a smooth surface. Tanaka et al. teaches a rubber cleaning roller (element 24 and Paragraph 0045). It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Takeda to replace the cleaning roller thereof with a rubber cleaning roller as taught by Tanaka et al., since Tanaka et al. teaches that rubber easily removes dust particles from paper.

22. Claims 46,55,82 and 91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asai et al. (JP 2002-172839) in view of Hiroshi et al. (JP 05-70010).

Asai et al. teaches a stencil printer with a first and a second image, which are to be respectively transferred to one side and the other side of a sheet-like recording medium, side by side in a circumferential direction of a print drum, wrapping said master

around said print drum, pressing said sheet-like recording medium against said print drum with a press roller to thereby print said first image on said one side, and then pressing said sheet-like recording medium against said print drum with said press roller to thereby print said second image on said other side (Solution). Asai et al. does not disclose fine projections formed on a surface by a treatment.

Hiroshi et al. teaches a roller with projections on the surface (elements 15, Abstract and Constitution). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention as taught by Asai et al. to include the projections thereof as taught by Hiroshi et al., since Hiroshi et al. teaches that it is advantageous to facilitate the adhesion of the paper onto the roller.

23. Claims 50,55,86 and 91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asai et al. (JP 2002-172839) in view of Hiroshi et al. (JP 05-70010) as applied to claims 46 and 82 above, and further in view of Takeda (US Patent 5,937,750) and Ito (JP 410166705).

Asai et al. and Hiroshi et al. both teach the invention claimed with the exception of a cleaning means for removing ink deposited on a surface of a press roller and a roller pressed against a press roller by preselected pressure. Takeda teaches a cleaning means (Column 6, Lines 12-14 and elements 50,58 and 90) for removing ink deposited on a surface of said press roller (Column 10, Lines 61-65). However, he does not explicitly disclose a roller pressed against a press roller at a preselected pressure. Ito teaches a cleaning device (10) pressed against a transfer body (4) for the cleaning the surface and in turn transfers an image to the paper (Solution).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Asai et al. to include a cleaning means as taught by Takeda, since Takeda teaches that it is advantageous to effectively clean the surface of a roller of all dirt particles.

Also, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Asai et al. to include roller pressed against a surface for transferring an image as taught by Ito, since Ito teaches that it is advantageous to be in a state with less oily components

24. Claims 51,52, 87 and 88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asai et al. (JP 2002-172839) in view of Hiroshi et al. (JP 05-70010) ,Takeda (US Patent 5,937,750) and Ito (JP 410166705) as applied to claims 46,50, 82 and 86 above, and further in view of Kanno (US Patent 6,718,872).

Asai et al., Hiroshi et al., Takeda and Ito et al. all teach the claimed invention with the exception of a cleaning means located between a position for transferring an image to a recording medium and a position of refeeding and a drive means causing a roller to rotate at a peripheral speed different from a peripheral speed of a roller. Kanno teaches a printer with duplex capabilities with a cleaning means (26) located between a position for transferring an image and a position of refeeding (25) and a cleaning drive means for operating a roller at a different peripheral speed (Column 6, Lines 51-56).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Asai et al. to include a

cleaning means at the claimed location and a drive means as taught by Kanno, since Kanno teaches that it is advantageous to thoroughly and properly clean the surface of the press roller in an effective amount of time.

25. Claims 53 and 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asai et al. (JP 2002-172839) in view of Hiroshi et al. (JP 05-70010), Takeda (US Patent 5,937,750), Ito et al. (JP 410166705) and Kanno (US Patent 6,718,872) as applied to claims 46, 52, 86 and 88 above, and further in view of Tomono et al. (US Patent 5,400,065).

Asai et al., Hiroshi et al., Takeda, Ito et al. and Kanno all teach the claimed invention with the exception of a porous cleaning roller. Tomono et al. teaches a porous cleaning roller (element 8 and figure 8). It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Asai et al. to replace the cleaning means thereof with a porous cleaning roller as taught by Tomono et al., since Tomomo et al. teaches that it is advantageous to not scratch the surface of any element the roller may come in contact with.

26. Claims 54 and 90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asai et al. (JP 2002-172839) in view of Hiroshi et al. (JP 05-70010), Takeda (US Patent 5,937,750) and Ito (JP 410166705) as applied to claims 46, 50, 82 and 86 above, further in view of Ozaki et al. (US Patent 5,207,157).

Asai et al., Hiroshi et al., Takeda and Ito et al. all teach the invention claimed including a cleaning means comprising a blade (elements 58,90 located on Figures 16-17) that contacts a press roller (20), however he does not explicitly disclose a coating

means for coating a small amount of liquid on a surface of a press roller. Ozaki et al. teaches a coating means for coating a small amount of liquid (136) on the surface of a cleaning roller (Column 10, Lines 39-41 and 61-65). By coming in contact with the cleaning roller, the press roller will inherently be coated with a small amount of liquid. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Asai et al. to include a coating means as taught by Ozaki et al., since Ozaki et al. teaches that it is advantageous to effectively clean the surface of a roller of all dust and dirt particles.

27. Claims 56 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asai et al. (JP 2002-172839) in view of Hiroshi et al. (JP 05-70010), Takeda (US Patent 5,937,750) and Ito (JP 410166705) as applied to claims 46 and 55 above, and further in view of Tanaka et al. (JP 2001-239733).

Asai et al., Hiroshi et al., Takeda and Ito et al. all teach the invention claimed including a blade (58,90) as taught by Takeda. However, they do not explicitly teach a roller that is formed of either one of rubber and metal and has a smooth surface. Tanaka et al. teaches a rubber cleaning roller (element 24 and Paragraph 0045). It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Asai et al. to replace the cleaning roller thereof with a rubber cleaning roller as taught by Tanaka et al., since Tanaka et al. teaches that rubber easily removes dust particles from the surface of paper.

28. Claim 77 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (US Patent 5,937,750) in view of Hiroshi et al. (JP 05-70010) as applied to claims 70 and 74 above, and further in view of Tomono et al. (US Patent 5,400,065).

Takeda and Hiroshi et al. both teach the claimed invention with the exception of a porous cleaning roller. Tomono et al. teaches a porous cleaning roller (element 8 and figure 8). It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Takeda to replace the cleaning means thereof with a porous cleaning roller as taught by Tomono et al., since Tomomo et al. teaches that it is advantageous to not scratch the surface of any element the roller may come in contact with.

29. Claims 92 and 93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asai et al. (JP 2002-172839) in view of Hiroshi et al. (JP 05-70010), Takeda (US Patent 5,937,750) and Ito (JP 410166705) as applied to claims 82 and 91 above, and further in view of Tanaka et al. (JP 2001-239733).

Asai et al., Hiroshi et al., Takeda and Ito et al., all teach the invention claimed including a blade (58,90) as taught by Takeda. However, they do not explicitly teach a roller that is formed of either one of rubber and metal and has a smooth surface. Tanaka et al. teaches a rubber cleaning roller (element 24 and Paragraph 0045). It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Asai et al. to replace the cleaning roller thereof with a rubber cleaning roller as taught by Tanaka et al., since Tanaka et al. teaches that rubber easily removes dust particles from the surface of paper.

30. Claims 106,107 and 109 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (US Patent 5,937,750) in view of Hiroshi et al. (JP 05-70010).

Regarding claims 106 and 107, Takeda teaches at least one print drum (1), at least one press roller (20,26,28 and 29) facing said print drum for pressing the recording medium against said print drum (Figures 1,11 and 15-17) and wherein said press roller comprises when configured to press the other side of the recording medium against said print drum (Abstract) and an elastic body having a fluorine compound layer on a surface thereof, a fluorine compound layer comprising a tube and wherein the fluorine compound layer is formed of a coating (column 8, lines 31-33 and lines 47-49 and many references throughout the patent). However, he does not explicitly disclose a number of conical projections, each having a peak provided with a radius of 0.04 mm or below, at a mean pitch of 0.4 mm or below and peak angles of 100° or below. Hiroshi et al. discloses conical projections (elements 15), however he does not explicitly disclose a peak radius, a peak angle and a mean pitch.

However, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller, 105 USPQ 233.* It would have been obvious to have some degree of mean pitch, peak angle and a peak radius between the projections, since such a modification would result in a press roller having the required roughness so to aid in the transportation of a recording medium.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention as taught by Takeda to replace the press roller thereof with a press roller with projections as taught by Hiroshi et al., since Hiroshi et al. teaches that it is advantageous to facilitate the adhesion of the paper onto the roller.

Regarding claim 109, Takeda teaches a cleaning means (Column 6, Lines 12-14 and elements 50,58 and 90) for removing ink deposited on a surface of said press roller (Column 10, Lines 61-65). 21.

31. Claims 110 and 111 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (US Patent 5,937,750) in view of Hiroshi et al. (JP 05-70010) as applied to claims 106 and 109 above, and further in view of Kanno (US Patent 6,718,872).

Takeda and Hiroshi et al. all teach the claimed invention with the exception of a drive means causing a roller to rotate at a peripheral speed different from a peripheral speed of a roller. Kanno teaches a printer with duplex capabilities a cleaning drive means for operating a roller at a different peripheral speed (Column 6, Lines 51-56).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Takeda to include a drive means that operates at different speeds as taught by Kanno, since Kanno teaches that it is advantageous to thoroughly and properly clean the surface of the press roller in an effective amount of time.

32. Claims 112 and 113 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asai et al. (JP 2002-172839) in view of Hiroshi et al. (JP 05-70010).

Asai et al. teaches a stencil printer with a first and a second image, which are to be respectively transferred to one side and the other side of a sheet-like recording medium, side by side in a circumferential direction of a print drum, wrapping said master around said print drum, pressing said sheet-like recording medium against said print drum with a press roller to thereby print said first image on said one side, and then pressing said sheet-like recording medium against said print drum with said press roller to thereby print said second image on said other side (Solution). Asai et al. does not teach an a number of conical projections, each having a peak provided with a radius of 0.04 mm or below, at a mean pitch of 0.4 mm or below and peak angles of 100° or below. Hiroshi et al. discloses conical projections (elements 15), however he does not explicitly disclose a peak radius, a peak angle and a mean pitch.

However, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller, 105 USPQ 233.* It would have been obvious to have some degree of mean pitch, peak angle and a peak radius between the projections, since such a modification would result in a press roller having the required roughness so to aid in the transportation of a recording medium.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention as taught by Asai et al. to replace the press roller thereof with a press roller with projections as taught by Hiroshi et al., since Hiroshi et al. teaches that it is advantageous to facilitate the adhesion of the paper onto the roller.

33. Claim 115 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asai et al. (JP 2002-172839) in view of Hiroshi et al. (JP 05-70010) as applied to claim 112 above, and further in view of Takeda (US Patent 5,937,750).

Asai et al. and Hiroshi et al. both teach the invention claimed with the exception of a cleaning means for removing ink deposited ink on the surface of an ink roller. Takeda teaches a cleaning means (Column 14, Lines 12-20). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention as taught by Asai et al. to include a cleaning means thereof as taught by Takeda, since Takeda teaches that it is advantageous to properly and thoroughly clean the surface of the roller.

34. Claims 116 and 117 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (US Patent 5,937,750) in view of Hiroshi et al. (JP 05-70010) as applied to claims 112 and 115 above, and further in view of Kanno (US Patent 6,718,872).

Takeda and Hiroshi et al. all teach the claimed invention with the exception of a drive means causing a roller to rotate at a peripheral speed different from a peripheral speed of a roller. Kanno teaches a printer with duplex capabilities a cleaning drive means for operating a roller at a different peripheral speed (Column 6, Lines 51-56).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention as taught by Takeda. to include a drive means that operates at different speeds as taught by Kanno, since Kanno teaches that it is advantageous to thoroughly and properly clean the surface of the press roller in an effective amount of time.

Allowable Subject Matter

35. Claims 124-135 are allowed.

36. Claims 10, 21,35-37, 44, 47-49, 71-73, 80, 83-85, 108 and 114 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Regarding claims 35-37, 47-49, 71-73 and 83-85, the prior art does not teach or render obvious an elastic body comprising rubber while said film comprises at least one of fine glass grains and fine ceramic grains.

Regarding claims 10, 21, 44 and 80, the prior art does not teach or render obvious an elastic roller having an adhesive surface while said elastic roller comprises rubber and is caused to rotate by said press roller.

Regarding claims 108 and 114, the prior art does not teach or render obvious wherein said projections are formed on an elongate sheet member having a preselected width and spirally wrapped around the surface of a press roller.

Regarding claims 124, the prior art does not teach or render obvious a printer operable in a duplex print mode for printing an image on one side of a sheet-like recording medium and then printing, within 3 seconds, an image on the other side of said sheet-like recording medium, said printer comprising a press roller comprising,

when configured to press the other side of the sheet-like recording medium against said print drum, a surface including a stepped portion formed by a number of spherical bodies, each having a radius of 0.1 mm or below, arranged with a maximum difference in height of 0.03 mm or above and a mean pitch of 0.15 mm or above between nearby highest peaks.

Regarding claims 130, the prior art does not teach or render obvious a printer operable in a duplex print mode by forming in a master a first and a second image, which are to be respectively transferred to one side and the other side of a sheet-like recording medium, side by side in a circumferential direction of a print drum, wrapping said master around said print drum, pressing said sheet-like recording medium against said print drum with a press roller to thereby print said first image on said one side, and then pressing, within 3 seconds, said sheet-like pressing member against said print drum with said press roller to thereby print said second image on said other side, said press roller comprises a surface including a stepped portion formed by a number of spherical bodies each having a radius of 0.1 mm or below, arranged with a maximum difference in height of 0.03 mm or above and a mean pitch of 0.15 mm or above between nearby highest peaks.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marissa L. Ferguson whose telephone number is (571)

272-2163. The examiner can normally be reached on (M-T) 6:30am-4:00pm and every other (F) 7:30am-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on (571) 272-2168. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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